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Can a single region in Florida show the state how to adapt to climate change?

August 19, 2016 12.12pm AEST

A 2009 flood, worsened by a high tide, in Miami. maxstrz/flickr, CC BY

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With every passing year, Southeast Florida faces more pressure to adapt to climate change. The region already experiences the effects of climate change, such as flooding on sunny days during the highest tides of the year, the failure of flood control canals, rapid beach erosion and saltwater intrusion into drinking water supplies.

In 2009 the Southeast Florida Regional Climate Change Compact – which brings together Florida's largest regional economy and most vulnerable cities – was created to tackle climate change.

The compact is just one example of a growing trend of local and regional organizations banding together to take action on climate change in the United States. With limited federal and state government support for adapting to climate change, regional climate efforts are particularly important in the U.S.

We and our colleagues studied Florida's regional efforts and found that its approach is innovative and has been effective in creating a culture of adaptation. But as a voluntary initiative, it provides guidance only to local governments without robust inducements or support from other levels. And Florida has had limited success with voluntary regional planning approaches in the past.

Vulnerable

The compact is a voluntary partnership of four counties (Broward, Miami-Dade, Monroe and Palm Beach) and 26 municipalities within those counties. It has received notable political attention. President Obama regards it as “one of the nation’s leading examples of regional-scale climate action” and has highlighted it as “a model not just for the country, but for the world.”

The emergence of local leadership for climate action reflects the climate-related pressures facing Southeast Florida. A three-foot rise in sea level would submerge more than a third of the region. Over 5.5 million people live in Southeast Florida, predominantly along the coast, so the risks to coastal infrastructure from sea level rise are substantial.

To prepare for effects of climate change, such as flooding of city infrastructure, municipal planners need to incorporate climate change into their land-use plans. skewgee/flickr, CC BY-SA

It is little wonder this region is considered one of the most vulnerable areas worldwide in terms of assets exposed to property damage from coastal flooding due to climate change.

Adapting to climate change in Southeast Florida, however, is complex. The underlying geology – much of the state lies above porous limestone – and generally flat topography means strategies used elsewhere to combat the effects of sea level rise will not work and that new ideas are needed. Also, Florida is home to a politically conservative state government that reportedly discourages the use of terms like “climate change,” “global warming” or “sustainability” in funding, policy, programs or research.

To adapt to the effects of climate change, governments need to redirect development

away from vulnerable locations and upgrade critical infrastructure such as roadways, water supply, wastewater and stormwater facilities to better withstand coastal flooding from sea level rise.

Thoughtful, yet limited, design

The Southeast Florida Regional Climate Change Compact is structured so that professional staff can build general agreement on recommendations for local governments and others to inform legislation, policy and planning. This occurs through the steering committee – the principal decision-making body of the compact.

The compact's steering committee consists of high-ranking professionals, usually only one or two levels below the county chief executive. Once it reaches regional agreement on policy and products, such as the unified sea level rise projection and the Regional Climate Adaptation Plan, the relevant authorities in each county or municipality translate this into local action.

The compact works through existing planning and policy processes by seeking to amend comprehensive land-use plans, stormwater master plans, zoning ordinances, building codes and transportation standards. Implementation is dependent on county and municipal decision processes, budgets, local approaches to public involvement, enforcement, monitoring and review, and politics.

The ability to prioritize climate action through development control and sustainability decisions varies across the region. The efforts done through existing planning and local initiatives build on years of experience in improving comprehensive plans and lessons about managing growth and development in Florida. Many states require local governments to prepare a comprehensive plan, and some require that these plans be aligned with land development regulations (the local zoning code, most notably). Through state statutes and key court decisions, comprehensive plans in Florida have become increasingly important; any alterations to local land use policies and all development decisions must be consistent with the local comprehensive plan.

With a sea level one foot higher, coastal Florida faces significant challenges to its coastal communities. NOAA

Template for other regions?

The level of uptake by local government appears to be relatively high, as the municipal implementation report highlights. Strategies to improve energy and fuel efficiency and policies to adapt water supply, water management and to improve local sustainability are among the most implemented recommendations of the climate action plan.

In terms of results, though, changes to county and municipal comprehensive plans, which function as sort of a long-range vision for communities, have been modest. The compact has placed climate change in the set of issues to be considered, but with no requirements that climate change be a primary factor to shape land-use decisions or infrastructure investments.

State, federal and regional governments participate in compact discussions and technical working groups and share scientific data for emergency management and vulnerability assessment in response to 1-, 2- and 3-foot sea level rises. But they are not bound to participate in decision-making processes or implement recommendations.

This coordinated structure means the regional body is able to lobby and achieve outcomes at these other levels of government. For example, in 2010 the compact negotiated the creation of Adaptation Action Areas (AAAs) by the Florida Legislature, and in 2015 state statute Chapter 163 was amended to strengthen Florida's Comprehensive Planning Law around flooding. Also, the Regional Climate Action Plan identifies priority areas for the region to lobby for federal resources, align state and local policy arrangements, and coordinate scientific data and new research. This sort of activity builds a narrative for more progressive climate change policies at state and federal level.

Questions remain about whether this is enough to influence outcomes. The compact does not require any actions by participating members and it controls no major resources of its own. It does have the capacity to steer policy and practice by involving county professionals, creating a culture of information sharing, building new knowledge and ideas to address climate change adaptation issues.

This provides a useful starting point for climate action. The collective weight of coordinated multiregional climate action could be just what's needed to strengthen the lobbying power and direct resources for supportive climate policies at the federal level. As such, other regions around the U.S. could consider replicating variations of Florida's regional planning model.

Climate change **Governance** **Infrastructure** **Sea Level Rise** **climate adaptation** **Resilience** **Florida** **urban resilience**